VASHCHENKO, K.I.; SUMTSOV, V.F.

Magnetic properties of magnesium cast iron. Lit.proizv. no.7:28-31 Jl '64. (MIRA 18:4)

ACCESSION NR. S/0128/65/000/002/0009/0010

AUTHOR: Rostovtsev, L. I. (Engineer); Vashchenko, K. I.; Lyutyy, V. A.; (Engineer) Martynov, L. P., Yanover, Ya. D. (Engineers)

TITLE: High chromium steel for heat-resistant castings

SOURCE: Liteynoye proizvodstvo, no. 2, 1965, 9-10

TOPIC TAGS: steel casting, heat resistant casting, heat resistant steel, high chromium steel, steel mechanical property, steel weldability, casting strength/ Kh21L sub ce steel, Kh24N12SL steel, Kh18N19TL steel

ABSTRACT: The authors describe the positive effect of additions (in unspecified proportions) of high-carbon scrap steel, low-carbon scrap ferrochromium ferrosilicon, ferromanganese, scrap metal mixture and ferrotitanium on the [illegible] steels. The following properties [illegible] the foundry were inveatigated: [illegible]

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I 4899-65

ACCESSION NR: AP5006973

3

(weight loss of 0.14-7.58 g/m^3.hr. in an intermittent treatment at 1000C for 100 hrs.), elongation (0.10.8%) and tensile (26.3-61.9 kg/mm^2) strength, welding properties, impact toughness (0.2-0.4 kg-m/cm^2), and machining behavior. The economic advantages of the industrial use of these quality steels in place of high-nickel steels are noted. "Welding and [illegible] were carried out in the Institute svarki AN UkrSSR (Welding Institute, AN UkrSSR). The remainder of the work was carried out in the Bazovaya liteynaya laboratoriya Kiyevskogo politekhnicheskogo instituta (Base Casting Laboratory, Kiev Polytechnic Institute) and the "Leninskaya kuznitsa" zavod ("Leninskaya kuznitsa" Plant)." Orig. art. has: 2 tables.

ASSOCIATION: None

SUBMITTED: 00 ENCL: 00 SUB CODE: MM

NO REF SOV: 003 OTHER: 000

Card 2/2

VASHCHENKO, K.I., doktor tekhn.nauk, prof.; SUMSKOY, V.F., kand.tekhn.nauk; STOYANCHENKO, S.I., inzh.; KARTASHYAN, V.O., [illegible]; TOLOK, G.T., inzh.

Elements of the design of suspension-type electromagnetic iron separators. Elektrotekhnika 36 no.12:36-40 D '65. (MIRA 19:1)

ACC NR: AP6026024 SOURCE CODE: UR/0418/66/000/001/0043/0046

AUTHOR: Vashchenko, K. I. (Doctor of technical sciences); Zhizhchenko, V. V. (Candidate of technical sciences); Firstov, A. N. (Candidate of technical sciences); Kostenko, G. D. (Engineer)

ORG: none

TITLE: Intensity of iron saturation in calorizing alloys and methods for refining them

SOURCE: Tekhnologiya i organizatsiya proizvodstva, no. 1, 1966, 43-46

TOPIC TAGS: aluminum containing alloy, metallurgic process, metal purification, binary alloy, temperature test, metal melting, intermetallic compound, iron containing alloy, metallurgy

ABSTRACT: The authors point out that the extent to which aluminum alloys are saturated by iron during calorizing has not been studied up to the present time and little effort has been made to develop methods for purifying these alloys. The problem of refining is important not only from the standpoint of producing binary alloy castings but also for purification of cast aluminum alloys in which iron is a harmful impurity.

Iron saturation was studied for pure aluminum and for aluminum alloys with 7.15 and 28% zinc, as well as in a zinc alloy with 0.2% aluminum since these

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UDC: 621.74.043:62:222

L 34186-66

ACC NR: AP6026024

alloys are recommended for use in calorizing. Zinc alloy specimens with 0.2% aluminum were calorized at 535-545°C, aluminum alloys at 680-690 and 720-730°C and pure aluminum at 680-690, 720-730 and 780-790°C. Each specimen was held in the calorizing alloy for five minutes. After every five specimens had been calorized, metal samples weighing 8-10 g were removed from the vat for determining iron concentration. It was found that the specific rate of dissolution and the intensity of iron saturation are increased by raising the calorizing temperature. This is due to an increase in the activity of the melts with respect to iron (the degree of heating and the saturation limit of the iron melt increase.)

The specific rate for dissolving of cast iron in an aluminum alloy with 7% Zn shows the same relationship to iron concentration as for pure aluminum. An increase in temperature from 680-690 to 720-730°C has no effect on specific rate of dissolving. Specific rate of dissolving is increased by raising the zinc content in the melt and at a concentration of 28% the rate is the same as for pure aluminum. However, the relationship between specific rate of dissolving and iron concentration in the calorizing alloy is stronger and differs somewhat from that for pure aluminum.

A sharp reduction in the specific rate of dissolving is observed at iron concentrations below 1.0-1.4% as a function of the calorizing temperature. Beyond this point, there is some increase in the dissolving rate after which it remains practically constant. This type of behavior in the specific rate of dissolving as a function of iron concentration is due to the extreme iron deficiency

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(0.012-0.018%) in the eutectic of the Zn-Fe system and the formation of intermetallic compounds at rather low iron concentrations.
The formation of Fe-Zn and Fe-Al intermetallic compounds (and possibly more complex systems) stabilizes the rate of dissolving. A zinc alloy with 0.2% aluminum yields satisfactory results in calorizing cast iron and steel. Iron saturation of this alloy is much lower than for aluminum or aluminum-zinc alloys. The specific rate of dissolution for iron in this alloy is also very low and increases somewhat with an increase in iron concentration in the alloy. Low iron saturation intensity in a Zn+0.2%Al alloy is due to the low calorizing temperature. Thus, the bath is quite highly saturated with iron during calorizing of steel in aluminum and aluminum alloys.

Two refining methods were tested: settling and filtering. Both methods are based on a reduction in the solubility of iron in aluminum and its alloys when the temperature is reduced. During settling, excess iron which is separated out in the form of aluminides or zincates is precipitated to the bottom of the vat due to its higher specific gravity. In the case of filtering, these iron compounds are retained by the filter for the same reason. Pure aluminum and aluminum-zinc alloy with 28% zinc with various initial iron concentrations were refined. The settling and filtering processes were carried out at a temperature 10-15°C above the solidus temperature. The settling time was four hours. Fusion of the refined alloys with zinc (up to 72% Zn) was used for reducing the

ACC NR: AP6026024

solidus temperature. It was found that filtering is an extremely effective refining process and is simpler and less expensive than the settling method. This method is particularly recommended for refining aluminum alloys containing zinc (Al+5.28% Zn and several cast alloys, e.g., AL111, AL114, AL115V, etc.), since the addition of up to 72% zinc to these alloys results in an extremely high purification from iron. Orig. art. has: 2 figures and 1 table. [JPRS: 35,432]

SUB CODE: 11 / SUBM DATE: none

Card 4/4

VASHCHENKO, K.I., doktor tekhn.nauk; FIRSTOV, A.N., kand.tekhn.nauk; ZHIZHCHENKO, V.V., kand.tekhn.nauk; DUPLYAK, V.D., inzh.; AVDOKUSHIN, V.P., inzh.; KOSTENKO, G.D., inzh.; GOLOVAN', N.A., inzh.

Die-casting of bimetallic motorcycle cylinders. Mashinostroenie no.4:65-68 Jl-Ag '65. (MIRA 18:8)

ROSTOVTSEV, L.I.; VASHCHENKO, K.I.; LYUTYY, V.A.; MARTYNOV, I.I., YANOVER, Ya.D.

High chromium steel for heat resistant castings. Lit. proizv. no.2:9-10 F '65. (MIRA 18:6)

VASHCHENKO, K.I., doktor tekhn. nauk; AVRINSKIY, P.V., kand. tekhn. nauk; VARENIK, P.A., inzh.

Core mixtures prepared by the sandblast method. Mashinostroenie no.3:20-23 My-Je '65. (MIRA 18:6)

VASHCHENKO, K.I., doktor tekhn.nauk; SUMTSOV, V.F., inzh.; MAKARENKO, S.F.,,inzh.

Choice of the optimum dimensions of the magnetic circuit of an electromagnetic pulley. Elektrotekhnika 34 no.12:32-35 D '63. (MIRA 17:1)

VASHCHENKO, L., starshiy nauchnyy sotrudnik

Jerusalem artichoke in Sakhalin. Nauka i pered.op.v sel'khoz. 9 no.8:25-26 Ag '59. (MIRA 12:12)

1. Sakhalinskaya kompleksnaya sel'skokhozyaystvennaya opytnaya stantsiya.

(Sakhalin--Jerusalem artichoke)

TYUTYUNNIKOV, Yu.B.; VERSHININA, S.V.; VASHCHENKO, L.A.; SHEPEL', A.V.

Selecting oils for charges in order to increase benzene and gas output. Koks i khim. no.16:43-45 '61. (MIRA 15:2)

1. Ukrainskiy uglekhimicheskiy institut.
(Benzene)
(Gases)

S/276/63/000/002/040/052
A052/A126

AUTHOR: Vashchenko, L.P.

TITLE: Vertical broaching machine for external broaching

PERIODICAL: Referativnyy zhurnal, Tekhnologiya mashinostroyeniya, no. 2, 1963, 182, abstract 2B1010 (Prom-st' Belorussii, no. 8(51), 55, 1962)

TEXT: The 7740 type machine of the Minsk plant im. Kirova is designed for processing outside surfaces of parts of various geometric configurations. The tractive force is 40,000 kg. The slide bar stroke is 1,600mm. The working stroke speed is 1-5 m/min, the return stroke speed is 10 m/min. The main drive power is 40kw, the pump efficiency is 400 m/min There is 1 figure.

Abstracter's note: Complete translation.)

Card 1/1

VASHCHENKO, M.A.; YATEL', T.P.; LITOVCHENKO, S.V.

Disorders of the nervous system in influenza C. Vrach.delo no.4: 373-376 Ap '57. (MLRA 10:7)

1. Vtoroye klinicheskoye otdeleniye (zav. - prof. N.I.Moroskin), epidemiologicheskiy otdel (zav. - kand.med.nauk N.P.Korytushenko) Instituta infektsionnykh bolezney AMN SSSR i kafedra nervnykh bolezney (zav. - deystv. chlen AMN SSSR, prof. B.N.Man'kovskiy) Kiyevskogo meditsinskogo instituta.
(NERVOUS SYSTEM--DISEASES) (INFLUENZA)

VASHCHENKO, M.A.

Modifications of the nervous system in influenza [with summary in French]. Zhur.nevr. i psikh. 57 no.3:337-340 '57. (MLRA 10:6)

1. Iz II klinicheskogo (gripposnogo) otdeleniya (zav. - prof. N.I. Moroskin) Instituta infektsionnykh bolezney Akademii meditsinskikh nauk SSSR, Kiyev.

(INFLUENZA, complications,
nervous system dis. (Rus))
(NERVOUS SYSTEM, diseases,
caused by influenza (Rus))

VASHCHENKO, M.A., Can Med Sci — (diss) " Affections of the nervous system in influenza." Kiev, 1958. 12 pp (Kiev State Order of Labor Red Banner Med Inst im Acad A.A.Bogomolets) 200 copies (KL,24-58,122)

VASHCHENKO, M.A.

Differential diagnosis of influenza and poliomyelitis [with summary in French]. Zhur.nevr. i psikh. 85 no.11:1363-1367 N'58(MIRA 12:1)

1. Institut infektsionnykh bolezney AMN SSSR, Kiyev.
(INFLUENZA, differential diagnosis
polio. (Rus))
(POLIOMYELITIS, differential diagnosis
influenza (Rus))

VASHCHENKO, M.A.; LITOVCHENKO, S.V.; YATEL', T.P.

Neurological syndromes in influenza during the 1959 epidemic. Vrach. delo no.8:55-59 Ag '60. (MIRA 13:9)

1. Institut infektsionnykh bolezney AMN SSSR i klinika nervnykh bolezney (zav. kafedroy - deystvitel'nyy chlen AMN SSSR, prof. B.N. Man'kovskiy) Kiyevskogo meditsinskogo instituta.
(INFLUENZA) (NERVOUS SYSTEM—DISEASES)

VASHCHENKO, M.A.; GOLUB, N.F.

Neuritis of the facial nerve caused by Coxsackie virus. Zhur. nevr. i psikh. 60 no.11:1416-1422 '60. (MIRA 14:5)

1. Institut infektsionnykh bolezney AMN SSSR, Kiyev.
(COXSACKIE VIRUSES) (NERVES, FACIAL—DISEASES)

VASHCHENKO, M.A., kand.med.nauk (Kiyev)

Diagnostic significance of piezography in poliomyelitis. Vrach. delo no.2:92-95 F '61. (MIRA 14:3)

1. Institut infektsionnykh bolezney AMN SSSR.
(POLIOMYELITIS) (ELECTROMYOGRAPHY)

VASHCHENKO, M.A.; SIRCHIN, A.M.

Method of registering electroexcitability of the muscles using a piezocrystal. Zhur. nevr. i psikh. 62 no.2:291-292 '62. (MIRA 15:6)

1. Institut infektsionnykh bolezney AMN SSSR, Kiyev.
(ELECTROMYOGRAPHY)
(PIEZOELECTRIC SUBSTANCES)

VASHCHENKO, M.A. (Kiyev)

Piezomyography in peripheral histionic paralysis. Vrach. delo no.11:97-100 N'63. (MIRA 16:12)

1. Institut infektsionnykh bolezney Ministerstva zdravookhraneniya UkrSSR.

VASHCHENKO, M.A.; ZHARNITSKIY, I.I.; BRAYER, Ye.M.

Temporal piezotonooscillography. Zhur. nevr. i psikh. 65 no.5:657-661 '65. (MIRA 18:5)

1. Institut infektsionnykh bolezney Ministerstva zdravookhraneniya UkrSSR, Kiyev.

VASHCHENKO, M.A. (Kiyev)

Neurological syndromes in influenza during an intraepidemic period (1960). Sbor.nauch.trud. Inst.infek.bol. no.4:164-167 '64.
(MIRA 18:6)

SINITSINA, F.F., kandidat tekhnicheskikh nauk; VASHCHENKO, M.M. (Kiyev)

Treatment with condensed sun rays by means of Bukhman's reflector.
Vrach.delo no.8:795-797 Ag '57. (MLRA 10:8)

1. Klinicheskaya bol'nitsa Stalinskogo rayona
(REFLECTORS) (SUN BATHS)

Vashchenko, M. Ya.

Gremitskiy, P. V. and Vashchenko, M. Ya. - "The treatment of [illegible] contractures of a tubercular knee joint with Vashchenko's apparatus," Trudy Ob"edin. nauch. soveta po Upr. Yevpator. kurorta, Vol. VII, 1948, p. 137-43, - Bibliog: 7 items

SO: U-4355, 14 August 53, (Letopis 'Zhurnal 'nykh Statey, No. 15, 1949.)

VASHCHENKO, M. YA.

Medicine

Orthopedic cast methods in osseoarticular tuberculosis; Izd. 2. Moskva, Medgiz, 1952

Monthly List of Russian Accessions, Library of Congress, October 1952. Unclassified.

VASHCHENKO, M. Ya.

Vashchenko, M. Ya. - "The experience gained in utilizing sawdust in manufacturing gelatinous orthopedic apparatuses," Trudy Ob"edin. nauch. soveta pri Upr. Yevpator. kurorta, Vol. VII, 1948, p. 145-46

SO: U-4355, 14 August 53, (Letopis 'Zhurnal 'nykh Statey, No. 15, 1949.)

L 30[illegible]-65 EEO(b)-2/EWP(k)/EWA(c)/EWT([illegible]) [illegible]
PT-4/Pi-4 [illegible]

ACCESSION NR: AT5006716 S/0000/64/000/000/0257/0260

AUTHOR: Severdenko, V. P. (Meritorious scientist of science and technology BSSR, Academician AN BSSR, Doctor of technical sciences, Professor); Tochitskiy, E. I.; Litvinko, A. G.; Vashchenko, N. D.

TITLE: Mechanism of growth of NaCl whiskers

SOURCE: AN BSSR. Fiziko-tekhnicheskiy institut. Plastichnost' i obrabotka metallov davleniyem (Plasticity and metalworking by pressure). Minsk, Izd-vo Nauka i tekhnika, 1964, 257-260

TOPIC TAGS: filamentary crystal, whisker growth, sodium chloride whisker, whisker strength

ABSTRACT: Filamentary crystals, or whiskers, of NaCl were grown by two methods: in a saturated solution of NaCl with the addition of polyvinyl alcohol and through a porous partition. In the first method 1% polyvinyl alcohol (by weight) was added to a saturated solution of NaCl, after which it was heated to the boiling [illegible] A second method [illegible] solution, pressure of the water vapor [illegible]

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L 39978-65

ACCESSION NR: AT5006716

experiments showed that even a negligible temperature fluctuation (from 10 to 27C) led to a change in the growth rate of the whiskers. With slow evaporation the growth rate reached 1 cm per day. Their cross section was square with sides from several to 100 μ with a size ratio of [illegible]. In the second method, with crystallization through a porous partition, whiskers [illegible] grew in the initial period. In subsequent periods they grew at a [illegible] less than that of the whiskers from the solution with polyvinyl alcohol. [illegible] saturated solution of NaCl [illegible] the porous partition took place as in the [illegible] through porous partition along capillary pores. The [illegible] and crystallization [illegible] to evaporation this solution became [illegible] the capillary pores [illegible] formed that were commensurate with the size of the capillary pores. [illegible] NaCl crystal that was formed filled the diameter of the capillary, it was pushed out by hydrodynamic forces; the unsaturated solution was again supersaturated, the NaCl was deposited on the root of the already formed crystal, and the solid phase was again pushed out. This growth continued until the weight of the crystal reached a certain magnitude above which the whisker could not adhere to the root in the capillary and dropped of its own weight. The length of the whiskers thus

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L 399[illegible]-65

ACCESSION NR: AT5006716

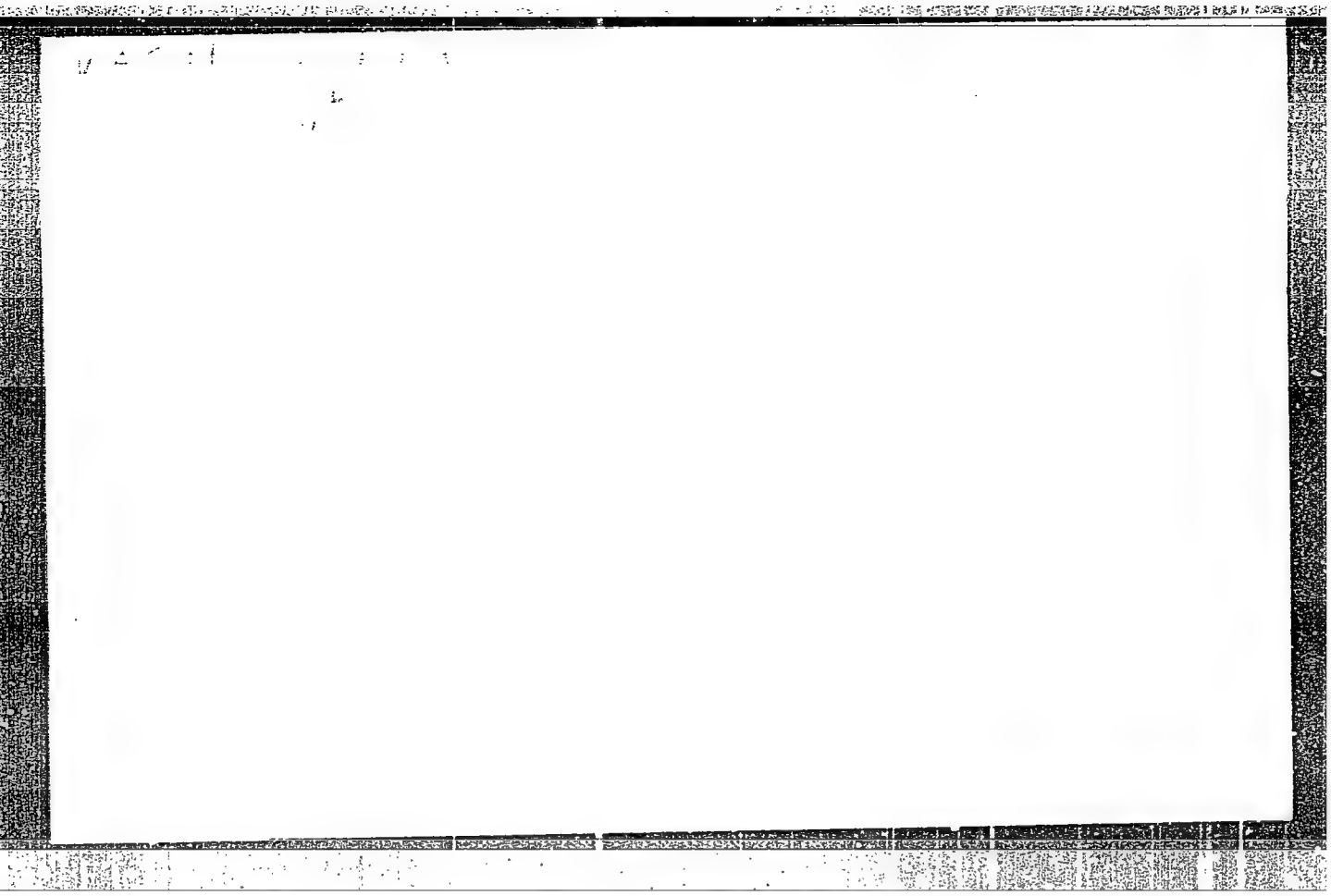
grown reached 1.5-2.0 cm and their thickness varied from 5 to 100 μ. Mechanical [illegible] of the dependence of strength on the cross section of the whisker. The best quality NaCl whisker had a breaking tic limit of about 1.4% and tensile strength of about 63 kg/mm^2, which is about 1000 times greater than for the usual NaCl crystals. Orig. art. has: 3 figures and 1 formula.

ASSOCIATION: None

SUBMITTED: 16May64 ENCL: 00 SUB CODE: IC , SS

NO REF SOV: 003 OTHER: 000

Card 3/3 MS



KHILENKO, Vasiliy Iosifovich; NAGORNYY, Anatoliy Onufriyevich; VASHCHENKO, Nikolay Mikhaylovich; TEMCHENKO, M.A., red.

[Pulse techniques] Impul'snaia tekhnika. Kiev, Izd-vo Kievskogo univ., 1964. 167 p. (MIRA 17:12)

SOV/86-59-4-44/48

AUTHOR: Vashchenko, N. S., Engr-Capt

TITLE: Once More on the Adjustment of PSBN-m Without the Use of Corner Reflectors (Yeshche raz o yustirovke PSBN-m bez ugolkovogo otrazhatelya)

PERIODICAL: Vestnik vozdushnogo flota, 1959, Nr 4, pp 86-87 (USSR)

ABSTRACT: The author states that the method of adjusting PSBN-m /radar bomb-sight/ without the use of corner reflectors, as recommended by Capt V. G. Serdyukov in his article "Adjusting PSBN-m without the use of Corner Reflectors" (was published in issue Nr 9 of this periodical in 1958), can be used as an auxiliary method. The method with the use of corner reflectors should be considered as the basic one and the adjustment of PSBN-m by this method should be carried out after 50-hour routine maintenance operations.

Card 1/1

VASHCHENKO, N.S., inzh.-kapitan

Regulating the radio comparator. Vest.Vozd.Fl. no.12:73-74 D '60.
(MIRA 14:5)
(Airplanes--Radio equipment)

VASHCHENKO, N.Ye.

The washing of sand for making contact-network poles. Transp.stroi. 10 no.6:55 Je '60. (MIRA 13:7)

1. Glavnyy inzhener Klyukvenskogo zavoda opneuporov zhlezobetonnykh konstruktsiy Mintransstroya.
(Uyar--Sand cleaning) (Electric lines--Poles)

VASHCHENKO, N.Ye.

Manufacture of reinforced concrete rings for silos in which to store cement. Transp. stroi. 12 no.12:45-46 D '62. (MIRA 16:1)

1. Glavnyy inzh. Klyukvenskogo zavoda zhelezobetonnykh konstruktsiy. (Precast concrete) (Cement--Storage)

VASHCHENKO, P.

The decision of the fifth plenum of the All-Union Central Council of Trade Unions are being carried out. Sov.profsoiuzy 4 no.10: 38-41 O '56. (MLRA 9:11)

1. Predsedatel' kul'turno-massovoy komissii zavkoma profsoyuza. (Trade unions)

VASHCHENKO, P.; GALUSHKO, Ye. [Halushko, IE.]; KONSEVICH, A. [Konsevych, A.]

Valuable research on the history and economics of the Western Ukraine. Dop.AN URSR no.7:997-999 '60. (MIRA 13:8)
(Ukraine, Western--History)

VASHCHENKO, P.; LINIYCHUK, Ya.; PANCHENKO, M.

"Scientific and economic foundations of the building of communism in the U.S.S.R." by O.O.Nestorenko. Reviewed by P.Vashchenko, IA. Liniichuk, M. Panchenko. Dop. AN URSR no.4:557-559 '64.
(MIRA 17:5)

VASHCHENKO, P.; KONSEVICH, A.

"Method of teaching economic geography of the U.S.S.R." by V.D.Podanchuk. Reviewed by P. Vashchenko, A. Konsevich. Geog. v shkole 23 no.4:92-93 Jl-Ag '60. (MIRA 13:10)
(Economic geography--Study and teaching)
(Podanchuk, V.D.)

VASHCHENKO, P. G.

Ratsional'nyi profil'kulaka kulachnoho hal'ma pidiimal'noi mashyny. Pid red. M. M. Fedorova. Kyiv, AN URSR, 1936. 42 p. diagrs.

Summaries in Russian and German.

Bibliographical footnotes.

(Efficient cam shape of a hoist engine cam brake.)

NN DLC: TJ1367.V3

SO: Manufacturing and Mechanical Engineering in the Soviet Union, Library of Congress, 1953.

VASHCHENKO, P. N.

The eccentric cam brake in mine elevators. Kyiv, Vyd-vo Ukrains'koi akademii nauk, 1955. 88 p.

GNATYUK, Dmitriy Ivanovich [Hnatiuk, D.]; SILIN, Boris Ivanovich [Sylin,B.]; VASHCHENKO, P.P., red.; KALASHNIKOVA, O.G., tekhn.red.

[On renewed land] Na onovlenii zemli. Kyiv, Vyd-vo TsKLKSMU "Molod'," 1957. 73 p. (MIRA 11:4)
(Transcarpathia)

VASHCHENKO, P.P.

Development trends of the productive forces of Soviet Bukovina during the seven-year plan, 1959 - 1965. Geog. sbir. no.5: 106-115 '62. (MERA 17:12)

VASHCHENKO, Petr Pavlovich; SLYUSAR', V., kand. ekon. nauk, retsenzent (Kiyev); STEPANOV, T., retsenzent (Chernovtsy); GALKIN, P.D., red.

[Soviet Bukovina] Sovetskaia Bukovina. Moskva, Uchpedgiz, 1963. 119 p. (MIRA 17:7)

VASHCHENKO, S F

USSR/Cultivated Plants. Potatoes. Vegetables. Melons M-5

Abs Jour : Ref Zhur - Biol., No 1, 1958, No 1614

Author : S.F. Vashchenko
Inst : Not Given
Title : The Phase Development of Cucumbers

Orig Pub : Agrobiologiya, 1956, No 5, 149-150

Abstract : The Vegetable Frowing Institute has studied during 1951-1954 the peculiarities of growth, development and fruitbearing of cucumbers of the Nerosimyye variety in relation to its seedling cultivation conditions. During the study of the vernalization phase the temperature and the moisture of the seeds were modified, and during the study of the light phase, the temperature, air humidity and length of day. Vernalization of the seeds at temperatures of 22-26° and a humidity of 50% accelerated the plant development somewhat; however, no structural change of any kind during the periods of growth until the end of vernalization has been observed. With unlimited seed dampness (moistening for 12 h. in water at room temperature), the appearance of flower tubercles was noted. These changes

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USSR/Cultivated Plants. Potatoes. Vegetables. Melons M-5

Abs Jour : Ref Zhur - Biol., No 1, 1958, No 1614

took place faster by raising the temperature from 14.4 to 21°. In a 10-12 h. day at temperatures of 20-25° in the daytime and 15-18° at night and the humidity of air at 85-95%, the plants started to bloom 2-3 days earlier and increased the yield on an average of 8-10% as compared with plants developed at 17-19° at daytime and 12-14° at night and air humidity of 70-80% in a 16-17 h. day.

Card : 1/1

ALEKSANDROV, S.V., kand.sel'skokhoz.nauk; BOGUSHEVSKIY, A.A., kand.tekhn. nauk; VASHCHENKO, S.F., kand.sel'skokhoz.nauk; GERASIMOV, B.A., kand.sel'skokhoz.nauk; GROMOV, N.G. [deceased]; KORBUT, V.A.; KUDREVICH, I.A.; MAMAYEV, M.G., kand.tekhn.nauk; NOVIKOV, A.P.; OSNITSKAYA, Ye.A.; SIMANOVSKIY, A.Yu.; SLEPTSOV, S.A.; SPIRIDONOVA, A.I.; TARAKANOV, G.I., kand.sel'skokhoz.nauk; CHENYKAYEVA, Ye.A.; KITAYEV, S.I., red.; FILATOV, N.A., zasluzhennyy agronom RSFSR; GRUDINKINA, A.P., red.; MARTYNOV, P.V., red.; ARTSYBASHEVA, A.P., tekhn.red.; BARBASH, F.L., tekhn.red.

[Vegetable growing under cover] Ovoshchevodstvo zashchishchennogo grunta. Moskva, Izd-vo M-va sel'.khoz.SSSR, 1960. 279 p. (MIRA 13:12)

(Vegetable gardening) (Greenhouses)
(Hotbeds)

NATSENTOV, D.I., kand.sel'skokh.nauk.; VASHCHENKO, S.F., kand.sel'skokh. nauk; NIKONOVA, N.A., kand. sel'skokh. nauk; CHEKUNOVA, Z.I., kand. sel'skokh. nauk; FAYNBERG, L.S., nauchnyy sotrudnik; GAVRIL'YEV, I.G., aspirant; VASIL'YEVA, Ye., red.; POKHLEBKINA, M., tekhn. red.

[Advanced practices for vegetable growing under glass] Peredovoi opyt ovoshchevodov zashchishchennogo grunta. Moskva, Mosk. rabochii, 1962. 102 p. (MIRA 16:6)

1. Sotrudniki Nauchno-issledovatel'skogo instituta ovoshchnogo khozyaystva (for all except Vasil'yeva, Pokhlebkina).
(Moscow Province--Vegetable gardening)
(Greenhouse management)

VASHCHENKO, S.F., kand. sel'khoz. nauk; TALOVA, V.F., red.

[Use of polymer films in vegetable growing] Primenenie polimernykh plenok v ovoshchevodstve; sbornik statei. Moskva, Kolos, 1964. 279 p. (MIRA 18:3)

1. Nauchno-issledovatel'skiy institut ovoshchnogo khozyaystva (for Vashchenko).

SOV/112-59-3-5147

Translation from: Referativnyy zhurnal. Elektrotekhnika, 1959, Nr 3, p 122 (USSR)

AUTHOR: Chekunova, Z. I., Vashchenko, S. F., and Natsentov, D. I.

TITLE: Operating Experience With and Comparative Evaluation of Reinforced-Concrete-Frame Hotbeds Having Various Systems of Heating (Opyt ekspluatatsii i sravnitel'naya otsenka parnikov s zhelezobetonnymi parubnyami i razlichnymi sistemami tekhnicheskogo obogreva)

PERIODICAL: Byul. nauchno-tekhn. inform. N.-i. in-ta ovoshchn. kh-va, 1957, Vol 2, pp 23-26

ABSTRACT: After a 3-year testing of hotbeds, the following conclusions were drawn: (1) reinforced-concrete frames are preferable to wooden; (2) the best heating method proved to be central water heating with 3-5 atm steam; (3) hotbeds with electrode-type heating are simpler and cheaper than others. Electric-energy consumption per sash for the season from the beginning of March is about 80 kw-hr, and from mid-March, 40 kw-hr. Roof-iron electrodes can

Card 1/2

Operating Experience With and Comparative Evaluation of Reinforced-Concrete . . . .

serve for 2 seasons. Connecting wires should be of copper because aluminum wires crumble. The standard electric-heating project must be revised: safety of personnel, as well as other improvements, must be secured. Technically-heated hotbeds require 2-2.5 times less labor than biological-fuel hotbeds. The CO_2 content in the technically-heated hotbeds should be artificially increased. The article presents a table giving a comparison of characteristics of hotbeds with various methods of heating and giving coal consumption for central water heating.

L.G.P.

MIRZAKARIMOVA, M.G.; VASHCHENKO, T.A.

Effect of an overdosage of water and salt and insolation on the participation of skin and muscles in minetal metabolism. Uzb. biol. zhur. 7 no.2:30-37'63. (MIRA 16:8)

1. Institut kravevoy eksperimental'noy meditsiny AN UzSSR.
(MINERAL METABOLISM) (HEAT—PHYSIOLOGICAL EFFECT)
(WATER METABOLISM)

MAMAYCHUK, M.I.; VASHCHENKO, T.N.

Reversion of the filtering forms of Proteus in the animal body. Zhur. mikrobiol., epid. i immun. 40 no.9:138 S'63. (MIRA 17:5)

1. Iz Pyatigorskogo farmatsevticheskogo instituta.

BONDARENKO, V.; VASHCHENKO, V.

In the "Gigant" mine. Mast.ugl. 9 no.11:20-21 N '60. (MIRA 13:12)

1. Nachal'nik tekhnicheskogo otdela Krivorozhskoy shakhty "Gigant" (for Bondarenko). 2. Glavnyy inzhener Krivorozhskoy shakhty "Gigant" (for Vashchenko).
(Krivoy Rog Basin--Iron mines and mining)

L 27402-65 EWT(m)/EWP(t)/EWP(b) JD

ACCESSION NR: AP5005915 S/0185/65/010/002/0206/0210

AUTHOR: Polyans'kyy, V. K. (Polyanskiy, V. K.); Vashchenko, V. I.

TITLE: Utilization of gas-kinetics phenomena for measuring the surface temperature of heated bodies

SOURCE: Ukrayins'kyy fizychnyy zhurnal, v. 10, no. 2, 1965, 206-210

TOPIC TAGS: surface temperature measurement, radiometric effect, thermocouple, accommodation coefficient, temperature measurement

ABSTRACT: A method is presented for indirect determination of the surface temperature of heated bodies to which conventional temperature measuring methods are not applicable, e.g., crystals growing by sublimation, the oxide layer of thermal... tubes, ... The method is based on the previously postulated radiometric effect (M. Knudsen, Ann. Phys., v. 34, 823, 1911). The surface to be measured (A) is placed in a vacuum opposite a second body (B) of the same size and shape but made of a material to which a thermocouple method is applicable. A thin metal foil is suspended between the two bodies, a small mirror is ... of the suspension support. The pressure on each side of the foil will depend on the temperature of ...

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L 27402-65

ACCESSION NR: AP5005915

bodies. At different temperatures, the foil deviates from its original position, and the degree of deviation is registered on a scale on which a light is reflected from the mirror. When the temperature of body B has been measured, the temperature of body A can be calculated by the equation $T_1 = T_2 \gamma_2/\gamma_1$, where T_1 is the temperature of body A; T_2 is the temperature of body B; and γ_1 and γ_2 refer to the accommodation coefficients of the two bodies. The sensitivity of the method depends on the sensitivity of the thermometer, on the pressure, and on the temperature of the two bodies. The method, which may also be used for determining the [illegible] of the body, is applicable at pressures ranging from 10^{-3} to 1 mm Hg. [illegible] [PS]
has: 1 figure and 9 formulas.

ASSOCIATION: Chernivets'kyy derzhuniversytet (Chernovtsy State University)

SUBMITTED: 10Apr64 ENCL: 00 SUB CODE: TD

NO REF SOV: 002 OTHER: 004 ATD PRESS: 3192

Card 2/2

44095

S/185/62/007/011/012/019
D234/D308

24 3950

AUTHORS: Rvachov, V.P., Vashchenko, V.I. and Berdnikov, V.P.

TITLE: Determination of the energy of optical radiation by means of selective receptors

PERIODICAL: Ukrayins'kyy fizychnyy zhurnal, v. 7, no. 11, 1962, 1226-1229

TEXT: If the spectral sensitivity of a selective receiver is $S(\lambda)$ and the spectral distribution of the incident radiation is $\varepsilon(\lambda)$, the indications of the receiver will be

$$n = \alpha_1 \int_0^\infty S(\lambda)\,\varepsilon(\lambda)\,d\lambda$$

The indication of a nonselective ideal photoactinometer are

$$n_{ph} = \alpha \int_{380}^{710} \varepsilon(\lambda)\,d\lambda.$$

Card 1/2

Determination of the energy ... S/185/62/007/011/012/019
D234/D308

The purpose of the paper was to reduce the indications of various receivers to those of an ideal photoactinometer by means of n/n_{ph}. Numerical values of the integrals were found graphically using spectral curves of various receivers and sources of radiation (those for incandescence lamps were calculated from black body radiation with corrections taken from a paper by Forsythe and Adams). A table of energy equivalents of a lux for various sources and of sensitivities of receivers (referred to that of an ideal photoactinometer) to various sources is added. There are 2 tables.

ASSOCIATION: Chernivetskyy derzhuniversytet (Chernovtsy State University)

SUBMITTED: March 24, 1962

Card 2/2

ACCESSION NR: AR4036029 S/0299/64/000/006/G006/G006

SOURCE: Referatiny*y zhurnal. Biologiya, Abs. 6G32

AUTHOR: Rvachev, V. P.; Berdnikov, V. F.; Vashchenko, V. I.

TITLE: Physical bases for measurements of the energy of photosynthetically active radiation with selective instruments

CITED SOURCE: Fiziol. rasteniy, v. 10, no. 5, 1963, 598-602

TOPIC TAGS: photosynthesis, solar radiation, radiation measurement, solar energy, photometer, photoactinometer, actinometry

TRANSLATION: The goal of this work was the evaluation of the relative sensitivity of existing instruments for the measurement of photosynthetically active radiation and the calculation of the corresponding corrective coefficients to adjust their readings to the readings of an ideal photoactinometer. The readings on the instruments depend essentially on the source of radiation, which is connected with the different distribution of energy in the spectra of the radiation sources. Usually, radiation sensors are rated under a heating lamp with a color temperature of 2850K. In this connection, in this paper, corrective coefficients are given for conversion of the readings of different instruments under

Card 1/2

ACCESSION NR: AR4036029

different radiation sources to the readings obtained under the heating lamp. Corrective coefficients are also given for converting the readings on instruments working under different radiation sources into energy units. Chernovitskiy un-t (Chernovtsy University). V. Korshunova

DATE ACQ: 09Apr64 SUB CODE: GP, LS ENCL: 00

Card 2/2

POLYANSKIY, V.K. [Polians'ky, V.K.]; VASHCHENKO, V.I.

Use of gas kinetic pheomena in determining the surface temperature of heated bodies. Ukr. fiz. zhur. 10 no.2:206-210 F '65. (MIRA 18:4)

1. Chernovitskiy gosudarstvennyy universitet.

VASHCHENKO, V.I.; POLYANSKIY, V.K.; TIMOFEYEV, V.B.

Polarizing action of prism spectral instruments. Zhur. prikl. spektr. 3 no.5:456-458 N '65. (MIRA 18:11)

GRUDINSKAYA, Irina Timofeyevna [Hrudyns'ka, I.T.]; VASHCHENKO, V.M., kand.geol.-mineral.nauk, otv.red.

[Underground waters of the Ukrainian Crystalline Shield (Polesye a. the forest steppe).] Pidzemni vody ukrains'koho krystalichnoho shchyta (Polissia ta lisostep) Kyiv, "Naukova dumka," 1964. 107 p. (Akademiia nauk URSR. Kiev, Instytut geologichnykh nauk. Pratsi. Seriia hidrogeologii i inzhenernoi geologii, no. 11) (MIRA 17:6)

L 22717-66 EWT(d)/EWP(1) IJP(c) BR/GS

ACC NR: AP6002937 (A) SOURCE CODE: UR/0286/65/000/024/0104/0104

AUTHORS: Alferov, A. V.; Vashchenko, V. P.; Glushkov, N. P.; Shepelev, V. R. 42 B

ORG: none

TITLE: A device for the automatic verification of angle-code converters. 16 C Class 42, No. 177165.

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 24, 1965, 104

TOPIC TAGS: code converter, code evaluation, error automatic data correlation, error detection code

ABSTRACT: This Author Certificate presents a device for the automatic verification of angle-code converters. The device includes a reference converter and the converter under examination, both of which are rotated by a single motor through a reduction drive. The device also includes a circuit for comparison of the code signals. This device provides simultaneous verification of all code paths and automates the process of initially setting the converters. The registers which store the codes of the reference converter and the converter under examination are connected through a circuit of discharge comparison of the codes to the

Card 1/3 UDC: 681.142—523.8.001.57

register for indicating the errors. These registers are also connected through the same circuit to a control device which engages and disengages the electromagnetic clutch (see Fig. 1).

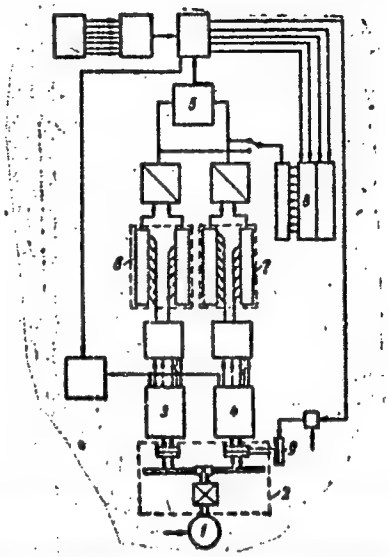

Fig. 1. 1 - Motor; 2 - reduction gear; 3 - reference converter; 4 - converter under examination; 5 - circuit for comparison of the code signals; 6 and 7 - storage registers; 8 - register indicating the error; 9 - electromagnetic clutch.

L 22717-66

ACC NR: AP6002937

The clutch engages at the moment of coincidence of the codes of the reference converter and the converter under examination. Orig. art. has: 1 figure.

SUB CODE: 09/ SUBM DATE: 01Nov63

Card 3/3 UDC

SHAKHTIN, D.M.; LEVITSKIY, E.V.; PRASKO, V.S.; ALEKHIN, A.I.,
LEBNER, A.I KULIK, A.I.; ZHELTOBRYUKH, V.P.; VASHCHENKO, V.F.

Apparatus for determining the density of a glass bar from the absorption of gamma radiation. Zav.lab. 30 no.4:501-502 '64.
(MIRA 17:4)

1. Ukrainskiy nauchno-issledovatel'skiy institut ogneuporov i Chasov-Yarskiy kombinat ogneupornykh izdeliy.

VASHCHENKO, V.S., gornyy inzhener; KUNIN, I.N., gornyy inzhener; LINNIK, G.F., gornyy inzhener.

Increasing the productivity of electric haulage at the "Gigant" mine. Gor. zhur. no.7:26-28 Jl '56. (MLRA 9:9)

1. Shakhta Gigant, rudoupravleniye imeni Dzerzhinskogo.
(Mine haulage)

VASHCHENKO, V.V., gornyy inzhener; KUNIN, I.N., gornyy inzhener; LIMNIK, G.F., gornyy inzhener.

Improving work organization at the "Gigant" mine. Gor.zhur. no.6:3-7 Je '57. (MLRA 10:8)

(Mine management)

MALAKHOV, G.M., prof., doktor tekhn.nauk; SHKUTA, E.I.; CHERNENKO, A.R.; VASHCHENKO, V.S.

For the highest possible labor productivity in underground mines. Gor. zhur. no. 11:3-7 N '60. (MIRA 13:10)

1. Krivorozhskiy gornorudnyy institut (for Malakhov). 2. Glavnyy inzh. rudnika im. Dzerzhinskogo (for Shkuta). 3. Nachal'nik shakhty Gigant krivorozhskogo rudnika im. Dzerzhinskogo (for Chernenko). 4. Glavnyy inzhener shakhty Gigant krivorozhskogo rudnika im. Dzerzhinskogo (for Vashchenko).
(Mining engineering--Labor productivity)

S/032/60/026/012/018/036
B020/B056

AUTHORS: Bessonov, M. I., Vashchenko, V. S., and Kuvshinskiy, Ye. V.

TITLE: Determination of the Surface Cracking Resistance of Transparent Plastic Materials on Wedge-shaped Samples

PERIODICAL: Zavodskaya laboratoriya, 1960, Vol. 26, No. 12, pp. 1390-1391

TEXT: The surface cracking recistance may be characterized by means of the tensile stress, at which the first visible cracks occur within a given time interval after application of load, or by determining the surface under stress in the case of a pure bending test, at which the first cracks occur. A further possibility is offered by the occurrence of cracks on the surface of plastic materials sometimes after having been wetted with organic liquids. For being able to judge the surface cracking resistance, these methods are, however, unsuited. V. R. Regel' (Ref. 7) suggests the curve $\tau_0 = f(\sigma)$, i.e., the determination of the time interval τ_0 from the instant of stress being applied to the sample up to the occurrence of the first cracks as a function of the tensile stress σ for the purpose of characterizing the surface

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cracking resistance of plastic materials. In the present paper, it is also suggested to characterize surface cracking resistance by means of the relation $\tau_o = f(\sigma)$, where the sample has the shape of a truncated wedge. The cracks at first occur in the narrow sections of the sample, and only later on the broader sections. A cracking front forms, which gradually shifts from the narrower to the broader sections of the sample. The width of the sample at the place of the "front" is periodically measured, the time since the beginning of the stress is noted, and from the thickness of the sample and the tensile force, the tensile stress corresponding to τ_o is calculated. The wedge-shaped samples (Fig. 1) were sawed with a circular saw. The angle of the wedge was about 5^o, the maximum width of the sample was 8-9 mm, and its minimum width 3 to 3.5 mm. The thickness of the samples was 1-4 mm, and their full length 55-60 mm. Before the experiments were made, the samples were heated to a temperature, which was higher by $10 - 20^o$ than the fusion point of the given material. In the case of the shape of the samples selected, the stress dropped from the minimum to the maximum section to about the half of its former amount. The results obtained

by wedge-shaped and ordinary samples were in good agreement (Fig. 2). For the purpose of calculating the relation $\tau_0 = f(\sigma)$, in the first case two, and in the second case 11 samples were used. The total time needed for the investigation, using a test cell, was in the first case about 8, and in the second case about 18 hours. There are 2 figures and 8 references: 4 Soviet, 3 US, and 1 German.

ASSOCIATION: Institut vysokomolekulyarnykh soyedineniy Akademii nauk SSSR (Institute of Highmolecular Compounds of the Academy of Sciences USSR)

VASHCHENKO, V.S.; KOLENKO, A.V.; SHMALIY, V.Ya.

Using shortened thread of the detonating cord in multiple blasting of deep holes. Sbor.rats.predl.vnedr.v proizv. no.1:3 '61. (MIRA 14:7)

1. Rudoupravleniye im. Dzerzhinskogo, shakhta "Gigant."
(Blasting)

VASHCHENKO, V. S., inzh.; LINNIK, G. F., dotsent; NIKULIN, S. Ye., dotsent; SULIMA, G. S., inzh.; KUCHERYAVENKO, I. A., inzh.

Improving stoping operations in the "Gigant" Mine. Izv. vys. ucheb. zav.; gor. zhur. no.10:13-17 '61.
(MIRA 15:10)

1. Krivorozhskaya shakhta "Gigant" (for Vashchenko).
2. Krivorozhskiy gornorudnyy institut (for Linnik, Nikulin, Sulima, Kucheryavenko). Rekomendovana kafedroy razrabotki rudnykh mestorozhdeniy poleznykh iskopayemykh Krivorozhskogo gornorudnogo instituta.

(Krivoy Rog Basin—Stoping(Mining))

MALAKHOV, G.M., prof., doktor tekhn.nauk; ZHELTETSKIY, A.Ye.; CHERNENKO, A.R.; VASHCHENKO, V.S.; NIKULIN, S.Ye., kand.tekhn.nauk; LINNIK, G.F., kand.tekhn.nauk; LAVRINENKO, V.F., kand.tekhn.nauk; SULIMA, G.S., gornyy inzh.

Breaking ore in a "compressed" medium in the Dzerzhinskiy Mine was not worthwhile. Gor.zhur. no.8:21-25 Ag '62. (MIRA 15:8)

1. Glavnyy inzh. rudoupravleniya im. Dzerzhinskogo (for Zheltetskiy). 2. Zaveduyushchiy shakhtoy "Gigant" rudoupravleniya im. Dzerzhinskogo (for Chernenko). 3. Glavnyy inzh. shakhty "Gigant" rudoupravleniya im. Dzerzhinskogo (for Vashchenko).
(Krivoy Rog Basin--Mining engineering)

VASHCHENKO, V.S., inzh.; SHMALIY, V.Ya., inzh.; NIKULIN, S.Ye., kand. tekhn. nauk; LINNIK, G.F., kand. tekhn. nauk; SULIMA, G.S., inzh.

Improving the operating efficiency at the "Gigant" mine. Met. i gornorud. prom. no.5:52-56 S-O '63. (MIRA 16:11)

1. Shakhta "Gigant", rudnik im. Dzerzhinskogo (for Vashchenko, Shmaliy). 2. Krivorozhskiy gornorudnyy institut (for Nikulin). 3. Institut avtomatiki Gosplana UkrSSR (for Linnik). 4. Krivorozhskiy gornorudnyy tekhnikum (for Sulima).

VERESA, F.I., gornyy inzh.; PORTNOV, A.A., gornyy inzh.; VASHCHENKO, V.S., gornyy inzh.

Improving methods of undercutting and blasthole caving. Gor. zhur. no.6:56-61 Je '63. (MIRA 16:7)

1. Rudnik im. Dzerzhinskogo, Krivoy Rog.
(Mining engineering)

VASHCHENKO, V.S.; UDOVENKO, I.P.; SHMALIY, I.P.

Interchangeable SVP-3M section in collapsible supports.
Met. i gornorud. prom. no.3:72-74 My-Je '64.

(MIRA 17:10)

MALAKHOV, G.M., prof., doktor tekhn. nauk; VASHCHENKO, V.S., KHIVRENKO, A.F.; VERESA, F.I.; BELEN'KIY, Ye.V.; SHMALIY, V.Ya.; PETRENKO, P.D.; BEZUKH, V.R.; SHULIN, N.I.; RODIONOVA, N.P., ved. red.

[Technical progress at the "Gigant" Mine in the Krivoy Rog Basin] Tekhnicheskii progress na shakhte "Gigant" v Krivorozhskom basseine. Moskva, Nedra, 1964. 119 p. (MIRA 18:3)

1. Glavnyy inzhener i nachal'nik shakhty "Gigant" v Krivorozhskom Basseyne (for Vashchenko).

MALAKHOV, G.M.; VASHCHENKO, V.S.; KHIVRENKO, A.F.; VERESA, F.I.; BELEN'KIY, Ye.V.; PETRENKO, P.D.; BEZUKH, V.R.

Fundamental improvement in the technology of mining at the "Gigant" Mine. Gor.zhur. no.1:36-40 Ja '65. (MIRA 18:3)

VASHCHENKO, V.S.

School of mechanical skill. Mekh. sil'. hosp. 12 no. 6:3 Je '61. (MIRA 14:5)

1. Brigadir mekhanizirovannoy komsomol'skoy brigady kolkhoza im. Chapayeva, Nizhinskogo rayona, Chernigovskoy oblasti.
(Farm mechanization)

VASHCHENOK, V.S.

Plague epizootics affecting the pika Ochotona pallasii Gray, in the northwestern part of the Mongolian People's Republic. Zool. zhur. 41 no.10:1548-1555 O '62. (MIRA 15:12)

1. Anti-plague Station of Leningrad.
(Mongolia--Pikas--Diseases and pests)
(Mongolia--Plague)

BESSONOV, M.I.; VASHCHENKO, V.S.; KUVSHINSKIY, Ye.V.

Determination of the "silver stability" of transparent plastics on V-shaped samples. Zav.lab. 26 no.12:1390-1391 '60.
(MIRA 13:12)

1. Institut vysokomolekulyarnykh soydineniy AN SSSR.
(Plastics--Testing)

VASHCHENKO, V. V

Category: USSR B-12

Abs Jour: R Zh--Kh, No 3, 1957, 7685

Author : Chovnyk, N. G., Vashchenko, V. V.
Inst : Not given
Title : A Polarographic Determination of the Number of Electrons Participating in the Electrochemical Reduction of Bismuth in Alloys

Orig Pub: Zh. Neorgan. Khimii, 1956, Vol 1, No 4, 710-712

Abstract: The polarogram for $BiCl_3$ in a melt made up of an equimolar mixture of $AlBr_3$ and NaCl has been recorded with a fixed tungsten electrode; the polarogram shows a clear single wave. The graph E vs. log $[i/(i_d-i)]$ is a straight line with a slope of 0.048 v; this slope corresponds to the reaction $Bi^{3+} + 2e \rightleftharpoons Bi^{+}$. The absence of inflection points on the curve which would correspond to the reduction of Bi^{+} indicates the instability of BiCl.

Card : 1/1 -19-

CHOVNYK, N.G.; VASHCHENKO, V.V.

Polarography of melts. Part 3: Application of the rotating disk electrode to the polorography of melts. Zhur. fiz. khim. 35 no.3:580-587 Mr '61. (MIRA 14:3)

1. Kuybyshevskiy aviatsionnyy institut.
(Polarography) (Electrodes, Platinum)

S/076/63/037/003/003/020
B101/B215

AUTHORS: Chovnyk, N. G., Vashchenko, V. V. (Kuybyshev)

TITLE: Determination of the diffusion coefficients of metals in amalgams

PERIODICAL: Zhurnal fizicheskoy khimii, v. 37, no. 3, 1963, 538-543

TEXT: The authors aimed at using nonstationary processes of anodic dissolution of liquid alloys to determine the diffusion coefficients of metals in alloys. In the present paper the determination of the diffusion coefficients of Cd, Pb, and Zn in their amalgams is studied by nonstationary diffusion currents. A geometrical consideration shows that the equation $i = zFC_0A\sqrt{D/\pi\tau}$ for diffusion from a semiinfinite space into a plane surface can be applied for the meniscus of amalgam (radius = 0.9cm). $A = 4\pi R^2$ is the electrode surface and D is the diffusion coefficient. A description is given of the measurement of electrode surface by evaluating its photograph or by determining the diffusion current of an ion whose D is exactly known. The oscillographs

Card 1/2

showed the linear dependence between i and $\sqrt{D/\tau}$; $D = (i\sqrt{\tau}\sqrt{\pi}/zFC_oA)^2$, where $i\sqrt{\tau}$ is the tangent of the slope of the straight lines, holds for the diffusion coefficient. Linearity is preserved up to 0.8 sec, but longer duration of electrolysis causes deviation owing to convection currents. The authors obtained $D = 2.45 \cdot 10^{-5}$ for Cd, $3.15 \cdot 10^{-5}$ for Pb, and $1.9 \cdot 10^{-5}$ cm^2/sec for Zn at 20°C. The apparent activation energy of diffusion is 1695 cal/mole (15-80°C) for Cd, 1910 cal/mole (15-50°C) for Zn, and 2800 cal/mole (15-50°C) for Pb. There are 7 figures.

ASSOCIATION: Kuybyshevskiy aviatsionnyy institut (Kuybyshev Aviation Institute)

SUBMITTED: November 1, 1961

Card 2/2

S/181/63/005/003/028/046
B102/B180

AUTHORS: Vashchenko, V. Ya., and Zubarev, V. N.

TITLE: On the Grüneisen coefficient

PERIODICAL: Fizika tverdogo tela, v. 5, no. 3, 1963, 886-890

TEXT: The Grüneisen coefficient (ratio between thermal pressure and thermal energy density) is usually calculated by one of the following formulas

$$\gamma_S = -\frac{2}{3} - \frac{V}{2}\frac{\frac{d^2}{dV^2}P_s}{\frac{d}{dV}P_s}, \qquad \text{(Slater)}$$

$$\gamma_{DM} = -\frac{1}{3} - \frac{V}{2}\frac{\frac{d^2}{dV^2}(P_s V^{5/3})}{\frac{d}{dV}(P_s V^{5/3})}. \qquad \text{(Dugdale-McDonald)}$$

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On the Grüneisen coefficient

S/181/63/005/003/028/046
B102/B180

$$\gamma_f = -\frac{V}{2}\frac{\frac{d^2}{dV^2}(P_s V^{1/3})}{\frac{d}{dV}(P_s V^{1/3})}.$$

(theory of the free volume)

The accuracy of the assumptions made on the derivation of these relations is discussed. The weak dependence of Poisson's ratio μ on the volume, in particular, has a considerable effect on Slater's result. Due to the difference in longitudinal and transverse frequencies in the Debye spectrum

$$\overline{\gamma_l = -\frac{d\ln\omega_l}{d\ln V}} \text{ и } \gamma_t = -\frac{d\ln\omega_t}{d\ln V}, \qquad (4)$$

$$\omega_l \sim \frac{\sigma_l^3}{V^{1/3}} \sim V^{1/3}\frac{1-\mu}{1+\mu}\frac{dP_s}{dV}; \quad \omega_t \sim \frac{\sigma_t^3}{V^{1/3}} \sim V^{1/3}\frac{1-2\mu}{1+\mu}\frac{dP_s}{dV}. \qquad (5)$$

one obtains

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On the Grüneisen coefficient

$$\left.\begin{aligned}\gamma_l &= -\frac{4-3n}{6} - \frac{V}{2}\frac{\frac{d^2}{dV^2}(P_x V^n)}{\frac{d}{dV}(P_x V^n)},\\ \gamma_l &= -\frac{4-3m}{6} - \frac{V}{2}\frac{\frac{d^2}{dV^2}(P_x V^m)}{\frac{d}{dV}(P_x V^m)},\end{aligned}\right\} \quad \gamma_m = \frac{3}{2}\frac{1-\mu_0}{1-2\mu_0}n. \qquad (8)$$

where μ_0 is the μ value at $P_x=0$. γ for $P_x=0$ is then given by $\gamma^0 = \gamma^0_S - \frac{n}{6}\frac{4-5\mu_0}{1-2\mu_0}$, γ^0_S being the γ value at $P_x=0$. $\mu(V)$ may be determined from γ^0_S and γ_{exp}: When $\gamma_{exp} < \gamma^0_S$, μ increases on compression ($n>0$) when $\gamma_{exp} > \gamma^0_S$, μ decreases ($n<0$). Up to now only three metals, Pt, Pb and Au, are known for which $\gamma_{exp} > \gamma_S$. The γ_{DM} formula was obtained from the

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oscillator model and is neither experimentally nor theoretically proven. Its occasional better agreement with experimental data is accidental. In the theory of the free volume

$$\gamma_f = \frac{\left(\frac{\partial \ln v_f}{\partial \ln V}\right)_T}{\frac{3}{2} + \left(\frac{\partial \ln v_f}{\partial \ln T}\right)_V}, \qquad (10)$$

with

$$v_f = \left\{\frac{2\pi kT}{\chi''(0)}\right\}^{1/2}, \qquad (12)$$

leads to

$$\gamma = -\frac{1}{2}\frac{d \ln \chi''(0)}{d \ln V}. \qquad (14)$$

where

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On the Grüneisen coefficient

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(13).

The latter relations agree with the initially given γ_f formula. For crystalline argon and KCl $\gamma(V)$ (γ as a function of the lattice constant d) is calculated according to Born's theory and compared with γ_S, γ_{DM}, γ_f; $\gamma_f(V)$ lies closest to the Born curve. For KCl the divergence increases with decreasing d, due to a phase transition. There are 2 figures.

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AUTHOR: Pavlovskiy, M. N.; Vashchenko, V. Ya.; Simakov, G. V.

TITLE: Equation of state of cesium iodide

SOURCE: Fizika tverdogo tela, v. 7, no. 4, 1965, 1212-1215

TOPIC TAGS: equation of state, cesium iodide, shock adiabat, electron excitation, thermodynamic property

ABSTRACT: This is a continuation of an investigation of CsI which was started earlier [...] where its shock compression was investigated [...]

density [...] g/cm³ and porous samples with density [...] g/cm³ [...] were used, and the test procedure was described in detail in the earlier paper. An equation of state is derived with the aid of the free volume theory [...]

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Waals forces, the Coulomb forces, and the overlap forces. Shock adiabats are plotted under various assumptions and the results prove the large role played by anharmonicity [illegible] thermodynamic [illegible]. The contribution of electron excitation to the thermodynamic quantities is estimated for high temperatures (but lower than the width of the forbidden band). The result that the electrons have a strong influence at high temperatures agrees qualitatively with the earlier and with the results obtained [illegible]. [illegible] 4 figures, [illegible].

ASSOCIATION: None

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KULAKOVSKIY, I.V.; VASHCHENKO, Ye.A.; LOBANOVSKIY, G.A.; YAKOVENKO, Ye.P.; BESSONOV, A.A.; GLOBIN, N.M.; PERCHANOK, B.Kh.

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